

**REMARKS**

The Office Action raised 35 U.S.C. §101 rejections on Claims 18-23 and cited Paragraph 173 of our specification, which defines that a data broadcasting program would be distributed from the broadcast apparatus to a receiving apparatus. The Office Action then assumed that the only medium for storing a program would be a transitory non-statutory wave or signal.

Applicant would direct the Examiner's attention to the original Claims 18-24 in our initial filing of our specification. These claims clearly define that there is a program recording medium in the broadcasting apparatus which is readable by a computer to enable the broadcasting apparatus to perform the functions of the present invention. As further set forth in the respective preambles of those claims, the computer program is embedded on a program recording medium.

The fact that a computer program, per se, can be sent from one computer base system to another computer base system and respectively stored in each computer base system, does not make our computer program as defined by a computer readable medium as non-statutory.

Reference can also be made to Page 11, Figure 1, Lines 8-9, where a program information holding unit in the broadcast apparatus stores program information including a data broadcast program. See Figure 5. Note, that the modules such as a contents transmission schedule unit 103 are driven by program information stored in the holding unit 101, see Page 26, Lines 1-5 and Figure 9, step 11.

It is possible to also point to equivalent disclosures throughout our specification, but it is believed that the above more than adequately establishes the statutory requirement of a recording medium for storing program instructions executable by a computer under 35 U.S.C. §101.

If the Examiner believes that a copy of the preamble language from the original claims should be directly inserted into our specification, the undersigned attorney would appreciate the

courtesy of a telephone call to resolve this issue in view of the extended prosecution that has occurred to date.

The Office Action further rejected Claims 1, 9, 12, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24 as not adequately describing the claimed subject matter in our specification in a manner that would convey to a person of ordinary skill, sufficient information to practice our claimed invention. More specifically, the Office Action pointed out that within the preceding time period, there was inadequate information to support claim language indicating the transmitting of program data for a specific program could be performed more than once during the part of the broadcasting bandwidth of a preceding time period allocated to a specific program.

Applicant believes, however, that the presently amended claims more than adequately addresses this issue and that with regards to Claim 29 which was also rejected under 35 U.S.C. §112, the amendments to Claim 29 also more than adequately moot this issue.

If there are any questions or constructive suggestions by the Examiner on these formality issues, the undersigned attorney would appreciate a telephone conference.

The current Office Action basically copied the Final rejection of March 5, 2008, with an exception on Pages 4 and 5 of referring to Column 7, Lines 29-37 of *Eldering* (U.S. Patent No. 6,615,039) and the commentary on Page 7 relating to the limitations then found in Claim 29 of the event message being independent of the specific program.

The Office Action did not address the specific arguments set forth in our Rule 116 Amendment, but contended that new grounds of rejection were provided. It is presumed that the new grounds of rejection primarily were directed to the 35 U.S.C. §112 issues and the 35 U.S.C. §101 issues, since the same references are applied in the same manner.

Utilizing the amendments to Claim 1, as an example (similar the amendments have been introduced into the other claims) we have now addressed the broad claim interpretation taken by

the Office Action rejection of the meaning of the terminology such as “scripts” and being transmitted from the transmitting claimed apparatus.

Applicant has already made of record the ISO/IEC 13818-1, Section 2.4.4 Standard which defines the table specification of a PMT (Program Map Table) that was referred to by the *Elderling* reference. A person of ordinary skill in this field would be deemed cognizant the difference between the script of the present invention as used for instructing caching and reproduction and a program map.

In defining an invention, a difficulty arises in using a two-dimensional verbal definition to represent a three-dimensional invention. To provide protection to an inventor and notification to the public, a proper interpretation of terms utilized in the claims must be adhered to in order to enable an appropriate evaluation of the invention and its scope relative to cited prior art.

Thus, not only should the concept of the invention be found in the prior art, but further, any cited structural elements in a prior art reference should be performing the same function with the same technical understanding to a person of ordinary skill in the field as the invention claims at issue.

Our invention, pertaining to amended Claim 1 of the present application, is as follows:

A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus to display the specific program in the reproduction time period, the broadcasting apparatus comprising:

(A) allotment unit operable to allot a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program, so that the part of the broadcasting bandwidth is narrower than the other part of the broadcasting bandwidth, the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program at

least once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program;

(B) script generation unit operable to generate (a) when the receiving apparatus receives an event message for instructing storage, a script of instruction for the receiving apparatus to store program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives an event message for instructing reproduction, a script of instruction for the receiving apparatus to perform the reproduction to display the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit, each of the scripts being automatically stored when the receiving apparatus receives the script;

(C) event message generation unit operable to generate the event message for instructing storage and the event message for instructing reproduction;

(D) transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment by the allotment unit, (a) repeatedly multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit resultant first multiplexed data prior to the preceding time period, (b) repeatedly multiplex program data of the specific program, the program data of the other program, and the script with the normal program based on the data carousel transmission method and transmit resultant second multiplexed data in the preceding time period, and (c) repeatedly multiplex the program data of the specific program and the script with the normal program based on the data carousel transmission method and transmit resultant third multiplexed data in the reproduction time period; and

(E) control unit operable to control the transmission unit to repeatedly transmit the event message for instructing storage in the preceding time period and to transmit the event message for instructing reproduction at the starting time,

(F) wherein the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

We have now clearly specified that the “reproduction” in the present application, is “reproduction by a receiving apparatus to display the specific program” (amendment of the preamble and (B)(b)) of Claim 1.

This amendment is supported by Paragraph [0112] of the specification (US2002/0008786) of the present application which recites, “the contents data processing unit 210 reads the contents C 1002 from the contents storing unit 211 in accordance with the event message (which instructs to reproduce the contents data with ID=1) that is transmitted at 8:14:00 shown in FIG 5” and Paragraphs [0114]-[0115] which recite “The reproduction unit 212 reproduces the audiovisual data and the contents. Figure 11 shows examples of reproduced images. ...In this way, the main program CMI and the specific program CM 1 as the data broadcasting program are reproduced simultaneously.” The support for the amendment is also apparent from Figures 11A and 11B which disclose reproduction examples of a specific program CM1.

As to the assertion in the First Office Action, that new matter had been added in (A) above has now been addressed, we have amended the expression “the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program more than once during the part of the broadcasting bandwidth for the preceding time period allotted to the specific program” to the expression “the preceding time period being longer than a time period that is necessary for transmitting a program data of the specific program at least once during the part of the broadcasting bandwidth for the preceding time period, allotted to the specific program.”

Support for this amendment is disclosed in Paragraph [0051] of the specification of the present application.

Amendments have also been made to clarify the function of the “script” generated by (B) the script generation unit above in view of the reliance on Program Map Tables in the rejection.

That is, the phrases “a script for ...” are revised to “a script of instruction for the receiving apparatus to ...” to clarify that each script is an “instruction” containing a program causing the receiving apparatus to execute specific processing (cache, reproduction; etc.).

“Script” is known to have a specific meaning in this technical field of information processing, and Paragraph [0064] of the specification of the present application includes the following description regarding processing using a message (which corresponds to “a script” in the Claim 1). We had also offered this explanation in our prior Remarks: “the data module preparation unit 104 adds messages, which designate the receiving apparatus to receive the data modules with IDs other than 0 and cache the data modules in the buffer and to reproduce it; in the contents data as the source of the data module with ID=0, before preparing the data module with ID=0.” Accordingly, this is not a new matter.

Amendments have been made to clarify the important aspect of our timing of transmitting data of broadcasting programs (specific program and the other program), and scripts.

Each of these is multiplexed with the normal program and transmitted based on a data carousel transmission method, and the transmitted multiplexed contents vary among time periods, as recited in (D)(a)(b)(c).

The recitations of (b) and (c) are also apparent from the recitations regarding the allocation of the bandwidth to the specific program, the other program (the program preceding the specific program), and the scripts (control contents) in Paragraphs [0051]-[0062] and Figure 5.

In addition, as recited in (F) above, the specific program is program data related to a commercial message inserted in the normal program, and its reproduction time period is the same as a broadcast time period of the commercial message. Accordingly, “data of the other program,” which excludes the specific program in the present application, indicates a data

broadcasting program other than a commercial message to be transmitted during a broadcasting time period of a normal program, and consequently, is transmitted during the reproduction time period of the normal program even before the preceding period. Thus, the amendment (a) is also disclosed in the embodiment of the present application.

The amendment made to the (E) control unit, i.e., “control the transmission unit to repeatedly transmit the event message for -instructing storage in the preceding time period” is supported by the following description in Paragraph [0151]: “event messages which designate the receiving apparatus to cache the contents C1002 (ID= 1), C1003 (ID=2), and C1005 (ID=3) of the specific programs are transmitted in their preceding time periods. An event message which designates to cache the contents data with ID=1 is transmitted at a time interval of 1 second, in case that T is set at 10 seconds.” Accordingly, this is not new matter.

The present invention is able to attain the following novel advantages.

Because the present application transmits contents of a specific program at least once in a preceding time period before the reproduction time-period of the specific program, the viewer does not have to wait unnecessarily for the receiving apparatus to acquire the data during the reproduction time period of the specific program.

During such processing, in the preceding period and the reproduction time period of a specific program, the present invention transmits to the receiving apparatus control scripts which the receiving apparatus automatically caches, the receiving apparatus caches the specific program by executing a script upon receiving the above-mentioned event message for instructing caching, and the receiving apparatus reproduces for displaying the specific program by executing a script upon receiving the above-mentioned event message for instructing reproduction. Further, since the event message for instructing caching is repeatedly transmitted, the receiving apparatus can cache the specific program in a reliable manner.

Also, regarding the reproduction to display the specific program data (hereinafter, “display reproduction”), the receiving apparatus will receive event messages for instructing display reproduction, which are transmitted in accordance with a schedule created by the broadcasting apparatus, and executes scripts based on these event messages. Accordingly, the receiving apparatus is not burdened with the need to manage the reproduction time and the like even in a case where the broadcasting apparatus transmits the contents of the specific program in the preceding time period and makes the receiving apparatus cache it. Consequently, when there is a sudden change in a reproduction time period of a commercial message in a normal program (for example, overtime in a sporting event), it can be handled flexibly by only changing the transmission time of the event message from the broadcasting station.

In addition, the data amount required for each event message for instructing caching or reproduction is extremely small, and thereby advantageously causing little communication load even when repeatedly transmitted.

Our invention, as defined in the current claims, provides adequate claim definitions to clearly avoid the cited art.

(1) Regarding the term “script” in the present invention, the Office Action argued that “*Eldering* also discloses that the PMT can be used to instruct the receiver to store and playback certain ads (Column 10, Lines 57-62). However, the PMTs disclosed by *Eldering* are in fact scripts that instruct the receiver to perform certain actions, including storing advertisements.”

However, in the same portion of *Eldering*, only the following statement is given.

“In an exemplary embodiment of this aspect of the invention, a receiver program selector receives the distribution data stream and uses a program map embedded therein to direct program and auxiliary data multiplexers (MUXes) to extract a selected primary program and selected portions of the auxiliary data stream, respectively. A video augmentation unit then inserts the selected auxiliary data into the primary program stream to create an augmented primary program which is supplied for decoding and

viewing. In the typical case, the auxiliary data comprises short program segments including both video and audio data.”

As discussed in our previous Remarks, a PMT in *Eldering* is a table for associating a PID (a packet ID) with a program, and obtaining a PID of a packet composing the specified primary program and the auxiliary data by referring to a PMT included in the distribution data stream. A PMT is used because it is required to specify a PID in order to “extract a selected primary program and selected portions of the auxiliary data stream respectively by using a program map.”

The definition of a PMT is provided in an MPEG-2 System that is a standard of a digital broadcast or the like. The statement regarding the PMT in *Eldering* is not beyond the scope of this standard, and the PMT itself does not perform a control operation of storing and display reproduction. Citing an unlisted Microsoft Computer Dictionary would not suggest to a person of ordinary skill to disregard the MPEG-2 standards.

In other words, in the conventional digital broadcast; control of a cache is performed based on a protocol by an existing communication standard that has been installed in the receiver. Therefore, *Eldering* does not disclose corresponding structure of the present invention in which control of cache is performed by the receiving apparatus based on a “script” transmitted from the transmitting apparatus.

Also, regarding reproduction, our current amendments have further clarified that the “script” in the present invention is a script instructing the receiving apparatus to perform reproduction to display the program data. In the case of the PMT in *Eldering*, it is merely that a predetermined PSI module has a function of selection and extraction, and unlike the present invention, a function of instructing the receiving apparatus to perform display production on the screen thereof at a scheduled time is not included.

A prominent feature of the present invention occurs in data broadcasting of a specific program, such as a commercial message, which is cached and reproduced for display not according to the existing communication standards but according to our scripts and event messages sent from the broadcasting apparatus to the receiving apparatus. Accordingly, caching and display reproduction by the receiving apparatus are controlled by the broadcasting apparatus, thereby enabling an extremely flexible data broadcasting system as a result.

That is, the broadcasting apparatus can transmit data of the specific program in a preceding time period immediately before the reproduction time period of the specific program, and at the reproduction time, the receiving apparatus receives an event message designating display reproduction and executes the script which it received in advance. This allows the data broadcasting of the specific program to be displayed by the receiving apparatus without delay and under control of the broadcaster.

Here, the data of the specific program is to be reproduced during a reproduction time period of a commercial message (see (F) above), and one reproduction time period of a specific commercial message is considerably short (30-45 seconds at most) compared to a normal program. Thus, the data broadcasting of the specific program is useless if not displayed during the corresponding production time period. Conventionally, such a situation can often occur. However, it can be prevented according to our present invention.

For example, when a normal program is a sports program and its broadcasting time is extended, or when important news interrupts a program, the reproduction time period of the commercial message may be delayed accordingly. Since according to the present invention, the receiving apparatus caches the data in advance and the reproduction time of the data is controlled by an event message transmitted from the broadcasting apparatus, which can designate display

reproduction, the broadcasting apparatus can easily adjust and change the reproduction time of the data of the specific program in accordance with any change in the normal programming.

Furthermore, when the same commercial message is used more than once during broadcasting of a normal program, instead of transmitting the data of the specific program all over again, it is only necessary to transmit the event message designating a display reproduction at each reproduction starting time, thereby providing greater convenience as a result.

In addition, since the data amount of the event message is small, there is no extra transmission load on the communication.

These advantages cannot be achieved by the PMT of the cited reference, and thus, the present invention sufficiently is now defined as an inventive step over the cited references.

The Office Action noted that "In an analogous art, *Suzuki* teaches a system with script generating means for generating, when receiving an event message for instructing reproduction, a script instructing the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit."

However, according to the invention of *Suzuki*, it is a user operating the receiver who transmits a reproduction request to a cable television station, and the receiver reproduces program information upon receiving a reproduction start control signal from the cable television station. Accordingly, the invention of *Suzuki* completely differs from the structure of the present invention which makes the receiving apparatus perform display reproduction in accordance with the broadcasting schedule prepared by the broadcasting apparatus.

Additionally, neither of other cited references *Swift* and *Allibhoy* disclose a structure that is unique to the present invention.

(4) As described above, the present invention sufficiently differs from the cited references not only in structure but also in advantageous effect, and thus, represents an inventive step in a relatively competitive and crowded art.

“Thus when differences that may appear technologically minor nonetheless have a practical impact, particularly in a crowded field, the decision-maker must consider the obviousness of the new structure in this light.”

*Continental Can Co. USA Inc. v. Monsanto Co.*, 20 U.S.P.Q. 2d. 1746, 1752 (Fed. Cir. 1991).

Also, with regard to the other independent Claims 9, 12, and 15-24, the same type amendment as with Claim 1 is made. Therefore, each of these independent Claims 9, 12, and 15-24 also involve an inventive step.

With regard to Claim 29, the Office Action indicated that the previous amendment of the definition of the transmission unit “...repeatedly transmit, as an event message independent of the specific program, each script generated by the script generation unit” lacked support in the specification.

We have now made the following amendment: “repeatedly transmit, as an event message, each script generated by the script generation unit in a cycle different from a cycle of the specific program.” This amendment is clearly supported by our disclosure in Paragraphs [0148]-[0153].

In particular, Paragraph [0148] includes the recitation “For example, instead of embedding a message M1 which designates to cache C1002, C1003, and C1005 in the data module with C1001 (ID=0) as shown in Figure 5, the message may be transmitted as an event message,” and Paragraph [0150] includes the recitation. “In addition, by shortening a time interval for transmitting an event message than the transmission period of the contents, the transmitted contents can be promptly cached. For instance, supposing the transmission period of

the contents C1002 (ID=1) is T (this period can be calculated using the data size of the contents and the transmission bandwidth of the contents which is indicated in the contents transmission schedule), an event message can be transmitted at a time interval of  $0.1T$ .” These recitations clearly disclose that an event message is transmitted in a cycle different from that of the specific program.

Our invention provides the following advantages.

1. A data module does not have a message which depends on another program. This is advantageous for reuse of a data module (rebroadcasting of a program, etc.). (Paragraph [0148]).

2. A script (event message) can be transmitted repeatedly a number of times in a transmission cycle which can be shorter than that of a data module. This enables the receiving apparatus to execute caching and display reproduction processing more reliably (Paragraph [0150]).

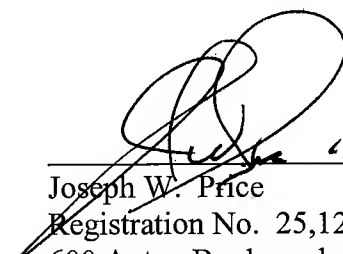
3. Our preamble, script generation unit, and control unit have been amended to clarify the technical differences over the cited references.

Applicant believes that the case is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of this case, the undersigned attorney can be contacted at the listed telephone number.

Very truly yours,

**SNELL & WILMER L.L.P.**



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